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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/718,818	11/22/2000	Hong Chen	QUK-015.02	1865

7590 06/22/2005

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EXAMINER	
TADESSE, YEWEBDAR T	
ART UNIT	PAPER NUMBER
1734	

DATE MAILED: 06/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/718,818	CHEN ET AL.	
	Examiner	Art Unit	
	Yewebdar T. Tadesse	1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *58-99* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *58-99* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/21/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 58-61, 63, 66, 68-79 and 83-86 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saliba et al (US 6,558,774) in view of Damer et al (US 6,365,061) and Bouldin et al (US 4,788,129). As to claims 58-61, 63, 66 and 68, Saliba et al discloses (see Fig 4A) a system for producing detectable servo tracks on a magnetic tape having a recording side (magnetic layer 4) and a non-recording side (back coating layer 7), comprising a marking mechanism including a light source (30) beams of optical radiation and a controller controlling the intensity of the beam (servo

tracking processor 34 capable of controlling the time dependent sequence of the beams) wherein the optical detectable servo tracks are formed on the non-recording side of the magnetic tape (7). Saliba et al lacks teaching a marking mechanism having a light source emitting a first beam, a pattern generator which splits the first beam into a plurality of spaced-apart second beams and a reel assembly. However, Damer et al discloses (see Fig 2 and column 2, lines 41-61, column 5, lines 21-28, see also Figs 6-7 for alternating beam splitting device having first and second optical elements) a system for laser etching of optical servo patterns on magnetic data storage tape (110), wherein two or more etching beams splitted or expanded by a splitting device (130) to write two or more servo tracks of desired servo pattern by moving the tape relative to the etching beams (132 and 134). It would have been obvious at the time the invention was made to include a marking mechanism such as shown by Damer et al having a single beam light source and a pattern generator splitting the first beam in Saliba et al to reduce energy cost and the time required to produce a servo pattern by using a plurality of splitted etching beams. As to a reel assembly, it is well known in the art to use a reel assembly to guide a tape; for instance Bouldin et al discloses (see Fig 4) a reel assembly (31 and 39) for passing the tape (35) through a work area. It would have been obvious at the time the invention was made to include a reel assembly in Saliba et al to advance the tape through the processing area. As to claim 69, Saliba et al teaches a UV laser beam in the range of approximately 260-330 nm and a pitch between patterns of about 1-100 microns. As to claims 70-76, Damer et al discloses (see Fig 3 and column 6, lines 61-67) a beam splitting device having optical elements (lenses 250, 252

and 240 and focus lens 260) having different polarization orientation. It would have been obvious at the time the invention was made to include a pattern generator or splitting device with such features in Saliba et al as modified to change the divergence angle between the etching beams and to provide a desired optical servo pattern as taught by Damer et al (see column 7, lines 40-47). As to claim 77, Saliba et al discloses (see Fig 6C) servo marks (46) arranged along the servo track. As to claim 78-79, Saliba et al discloses a controller (processor 34) controlling the amount of intensity of the light and (see column 4, lines 59-63 and column 5, lines 53-54). As to claim 83-86, Saliba et al includes (see column 14, lines 61-64) a finishing step of burnishing or cleaning.

4. Claim 62 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saliba et al (US 6,558,774), Damer et al (US 6,365,061) and Bouldin et al (US 4,788,129) as applied to claim 58 above, and further in view of Abramson (US 3,610,721). Saliba et al is silent concerning attenuator attenuating the intensity of the beams. Abramson teaches (see column 3, lines 29-30) attenuator (filters) for the light beams in magnetic hologram. It would have been obvious at the time the invention was made to include (attenuator) filters in Saliba et al as modified to adjust the intensity of the beam as taught by Abramson.

5. Claims 64-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saliba et al (US 6,558,774), Damer et al (US 6,365,061) and Bouldin et al (US

4,788,129) as applied to claim 58 above, and further in view of Brodsky et al (US 6,160,568). Saliba et al lacks teaching the pattern generator (beam splitter) having a closed-loop control of the pointing of the first beam and a one-dimensional Fourier array element. Brodsky et al discloses (see column 8, lines 34-40) beam splitter providing optical feedback to a closed-loop control for adjusting the power level of the laser source. It would have also been obvious at the time the invention was made to include a closed-loop control of the pointing of the first beam in Saliba et al to maintain marking output at a predetermined intensity level.

6. Claim 67 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saliba et al (US 6,558,774), Damer et al (US 6,365,061) and Bouldin et al (US 4,788,129) as applied to claim 58 above, and further in view of Braitberg (US 4,136,347). Saliba et al lacks teaching the pattern generator (beam splitter) having a one-dimensional Fourier array element. Braitberg discloses (see column 3, lines 12-48) a one-dimensional Fourier transform hologram to be stored on the tone wheel. It would have been obvious at the time the invention was made to include a one-dimensional Fourier array element in Saliba et al to attain a high hologram packing density as taught in Braitberg.

7. Claims 80-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saliba et al (US 6,558,774), Damer et al (US 6,365,061) and Bouldin et al (US 4,788,129) as applied to claim 58 above, and further in view of Saito et al (US 5,982,592) and Kosarko et al (US 4,833,556). Saliba et al is silent concerning a

stabilizer including a mechanical stop disposed proximate to the flat surface for interfering with lateral movement of the passing magnetic tape. Saito et al discloses (see Figs 2a and 2b) a recording device having stabilizer (6) and Kosarko et al discloses (see Abstract and Fig 2) a ceramic stabilizer (180 having a flat surface. It would have been obvious at the time the invention was made to include a stabilizer in Saliba et al as modified to hold appropriate contact state during traveling of the tape (see column 1, lines 27-31). It would have also been obvious to use a ceramic stabilizer in Saliba et al as modified to minimize the drag experienced in a magnetic interface between the stabilizer and the moving medium as taught by Kosarko et al.

8. Claims 87-94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saliba et al (US 6,558,774), Damer et al (US 6,365,061) and Bouldin et al (US 4,788,129) as applied to claim 58 above, and further in view of Ueyanagi (US 6,396,776). Saliba et al is silent concerning a verification sensor capable of detecting the servo track and wherein the sensor including edge detector. The use of tracking sensor is known in the art for tracking control; for instance Ueyanagi discloses (see column 15, lines 18-38) magnetic sensor 11 verifying recording mark immediately after recording. It would have been obvious at the time the invention was made to include a verification sensor in Saliba et al to send recorded signal to the controller.

9. Claims 95-96 and 99 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saliba et al (US 6,558,774) in view of Damer et al (US 6,365,061), Bouldin et al

(US 4,788,129) and Abramson (US 3,610,721). Saliba et al, Damer et al and Bouldin et al are cited for the same reasons discussed above showing the collection of elements of claim 95 and claim 99 listed as a marking mechanism, a laser, a pattern generator (splitting device with optical and focusing elements) and Bouldin et al's guiding assembly with rollers (reels). Saliba et al is silent concerning a beam-forming device capable of forming a conditioned beam having a selected beam size and power. Abramson teaches (see column 3, lines 29-30) a beam-forming device forming a conditioned beam (filters) for the light beams in magnetic hologram. It would have been obvious at the time the invention was made to include beam conditioner (filters) in Saliba et al as modified to adjust the intensity of the beam as taught by Abramson.

10. Claims 97 and 98 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saliba et al (US 6,558,774), Damer et al (US 6,365,061) and Bouldin et al (US 4,788,129) as applied to claim 95 above, and further in view of Saito et al (US 5,982,592). Saliba et al as modified is silent concerning a stabilizer of the guiding assembly including a mechanical stop disposed proximate to the flat surface for interfering with lateral movement of the passing magnetic tape. Saito et al discloses (see Figs 2a and 2b) a recording device having stabilizer (6). It would have been obvious at the time the invention was made to include a stabilizer in Saliba et al as modified to hold appropriate contact state during traveling of the tape (see column 1, lines 27-31).

Response to Arguments

11. Applicant's arguments filed 03/16/2005 have been fully considered but they are not persuasive.

The examiner withdraws the 112 2nd paragraph rejections of claims 95-99. Regarding the art rejections, applicants mainly argue (see page 5) that Saliba et al discloses a servo control system for tracking a previously formed servo track but does not disclose a system for forming servo tracks having a controller for controlling the intensity of the beam as claimed in claim 58. First, as recited in the rejections above Saliba et al discloses a marking mechanism forming servo tracks or patterns and a controller (servo tracking processor 34) controlling the intensity of beam (see column 5, lines 50-53) capable of providing a time dependent sequence of beams in forming the patterns. Additionally, see Fig 2 and column 5, lines 10-15 the marking means forming patterns on a magnetic tap using laser beams 40. Secondly, claim 58 recites that a controller controls the intensity of the first beam to provide a time dependent sequence ...as the tape passes through the *work area*. Various control functions such as controlling speed of the tape, controlling the intensity of light in forming and tracking patterns and others can be performed on different work areas of the magnetic tape by a central controller in the system for producing optically detectable servo track on a magnetic tape. As such, Saliba et al's controller is capable of controlling the intensity of beam applied to the tape in one of the work areas in the production of servo tracks on a magnetic tape. Therefore, the reference of Saliba combined with Damer et al and Bouldin et al is considered to meet the claimed feature. It is noted that throughout

applicants' specification, applicants teach that the work area being wherein the stabilizer element 34 (see paragraphs 35 and 40) is disposed. However, this work area of being where the stabilizer is disposed is not the claimed feature of this invention.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivations for the art rejections of claims 58-99 are recited in the rejections above.

In response to applicant's argument of that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In response to applicant's argument that Abramson is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant

was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Abramson's filter (attenuator) is pertinent to the particular problem for adjusting the intensity of the beam.

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yewebdar T. Tadesse whose telephone number is (571) 272-1238. The examiner can normally be reached on Monday-Friday 8:00 AM-4: 30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

YTT

CHRIS FIORILLA
SUPERVISORY PATENT EXAMINER
AU 1734